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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/904,556	07/16/2001	Ken Ito	Q65465	6022

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SUGHRUE, MION, ZINN, MACPEAK & SEAS
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EXAMINER
ORTIZ, EDGARDO

ART UNIT	PAPER NUMBER
2815	

DATE MAILED: 05/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/904,556	Ito Et.al.
Examiner	**Art Unit**
Edgardo Ortiz	2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Jul 16, 2001*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☐ Claim(s) _____ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☒ Claims *1-21* are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

This Office Action is in response to an election filed April 23, 2003.

Election/Restriction

1. Applicant's election without traverse of Group I (Claims 1-15, 18 and 19) in Paper No. 7 is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims include the limitation "*wherein the number of said hydrogen atoms is at least the number of total deficits of total oxygen atoms and metal atoms*", it is unclear from the claim language, what are the means and bounds of the claimed invention language as disclosed by Applicant.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 18 and 19 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Applicant's admitted prior art as shown on figures 1-3B and their descriptions on pages 1-9 of the instant application in view of Sonoda et.al. (U.S. Patent No. 4,258,080). With regard to Claim 1, Applicant's admitted prior art teaches a protective film (114) protecting a dielectric layer (112) of a plasma display panel (PDP) from discharge, containing metallic oxide (MgO).

However, Applicant's admitted prior art fails to teach the volume resistivity of the protective film as claimed. Sonoda discloses a method on which a metal oxide semiconductor or a conductive material of a desired resistivity can be obtained by controlling the quantity of an unsaturated metal halide. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Applicant's admitted prior art to include the volume resistivity as claimed, as suggested by Sonoda, in order to reduce sputtering effect and reduce driving voltages.

With regard to Claim 2, a further difference between the claimed invention and Applicant's admitted prior art is, three hydrogen atoms or more when the number of total atoms in said protective film is defined as 100. It would have been an obvious modification to someone with

ordinary skill in the art, at the time of the invention, to modify the structure as taught by Applicant's admitted prior art to include the quantity of hydrogen and nitrogen atoms as claimed, since it is a well known principle in the art that the discharge delay time depends on the driving method of the plasma display panel and thus the quantity of hydrogen and nitrogen atoms can be controlled as desired, in order to reduce sputtering effect and reduce driving voltages.

With regard to Claim 3, Applicant's admitted prior art teaches a protective film (14) protecting a dielectric layer (112) of a plasma display panel (PDP) from discharge, containing metallic oxide and hydrogen (page 5, lines 18-20 of the instant application). However, Applicant's admitted prior art fails to teach that there are three hydrogen atoms or more when the number of total atoms in said protective film is defined as 100. It would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Applicant's admitted prior art to include the quantity of hydrogen and nitrogen atoms as claimed, since it is a well known principle in the art that the discharge delay time depends on the driving method of the plasma display panel and thus the quantity of hydrogen and nitrogen atoms can be controlled as desired, in order to reduce sputtering effect and reduce driving voltages.

With regard to Claims 4 and 5, Applicant's admitted prior art teaches a protective film (14) comprising a metallic oxide that is MgO.

With regard to Claims 18 and 19, the claim language does not structurally distinguish from that taught by the prior art as stated supra.

Claims 6-9 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Applicant's admitted prior art as shown on figures 1-3B and their descriptions on pages 1-9 of the instant application in view of M.O. Aboelfotoh: Binn. Display Res. Conf. Records P62 (1978). With regard to Claims 6 and 7, a further difference between the claimed invention and Applicant's admitted prior art is, a peak of light emission intensity of light emitting center in 510 to 560 nm in a cathode luminescence is higher than that of light emission intensity of light emitting center in 280 to 440 nm or 680 to 760 nm.

Aboelfotoh discloses a an absorption wavelength peak at the light emitting wavelength peak at the light emitting wavelength peak at the light emitting wavelength of 360 nm to 400 nm is a peak called F+ center caused by oxygen deficit, an absorption peak at the light emitting wavelength of about 520 nm is a peak caused by exciton, and an absorption peak at the light emitting wavelength of about 730 nm is a peak caused by excessive oxygen. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Applicant's admitted prior art to provide the claimed peak of light emission intensity, as suggested by Aboelfotoh, by adjusting the oxygen concentration.

With regard to Claims 8 and 9, a further difference between the claimed invention and Applicant's admitted prior art is, the number of hydrogen atoms is at least the number of deficits of total oxygen atoms and metal atoms. As best the examiner is able to ascertain the claimed invention, Aboelfotoh discloses a an absorption wavelength peak at the light emitting wavelength peak at the light emitting wavelength peak at the light emitting wavelength of 360 nm to 400 nm is a peak called F+ center caused by oxygen deficit, an absorption peak at the light emitting wavelength of about 520 nm is a peak caused by exciton, and an absorption peak at the light emitting wavelength of about 730 nm is a peak caused by excessive oxygen. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Applicant's admitted prior art to provide the number of hydrogen atoms as suggested by Aboelfotoh, by adjusting the oxygen concentration.

Claims 10 and 11 are rejected are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Applicant's admitted prior art as shown on figures 1-3B and their descriptions on pages 1-9 of the instant application in view of Furuya (Japanese Patent Laid-Open No. 9-295894). With regard to Claims 10 and 11, as stated supra, essentially discloses the claimed invention but fails to show, said protective film is formed by means of performing a heat treatment in atmosphere including hydrogen in excited or ionized state. Furuya teaches a plasma display panel wherein a protective film is formed by means of performing a heat treatment in atmosphere including hydrogen in excited or ionized state. Therefore, it would have been an obvious modification to someone with

ordinary skill in the art, at the time of the invention, to modify the structure as taught by Applicant's admitted prior art to provide a protective film is formed by means of performing a heat treatment in atmosphere including hydrogen in excited or ionized state, as suggested by Furuya, in order to improve the orientation properties of the protective film.

Additionally the limitation "*said protective film is formed by means of performing a heat treatment in atmosphere including hydrogen in excited or ionized state*" is a product by process limitation. A "product by process" claim is directed to the product per se, no matter how actually made, In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Marosi et al, 218 USPQ 289; and particularly In re Thorpe, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear.

Claims 12 and 13 are rejected are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Applicant's admitted prior art as shown on figures 1-3B and their descriptions on pages 1-9 of the instant application in view of Aoki (Japanese Patent Laid-Open No. 11-3665). With regard to

Claims 12 and 13, Applicant's admitted prior art, as stated supra, essentially discloses the claimed invention but fails to show, the claimed surface roughness. Aoki discloses a plasma display panel including a protective film having a surface roughness of 30 nm or more. Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Applicant's admitted prior art to provide a surface roughness of 5 nm or more, as suggested by Aboelfotoh, in order to reduce discharge voltage and improve light illuminance.

Claims 14 and 15 are rejected are rejected under 35 U.S.C. § 103 (a) as being unpatentable over Applicant's admitted prior art as shown on figures 1-3B and their descriptions on pages 1-9 of the instant application in view of Aoki (U.S. Patent No. 5,993,543). With regard to Claims 14 and 15, Applicant's admitted prior art, as stated supra, essentially discloses the claimed invention but fails to show, the claimed protective film orientation. Aoki discloses a plasma display panel with a protective layer (14) having a (111) crystal orientation (see page 9, lines 56-60). Therefore, it would have been an obvious modification to someone with ordinary skill in the art, at the time of the invention, to modify the structure as taught by Applicant's admitted prior art to provide a protective film with a (111) crystal orientation, as suggested by Aoki, in order to improve high sputtering resistance.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Edgardo Ortiz (Art Unit 2815), whose telephone number is (703) 308-6183 or by fax at (703) 308-7722. In case the Examiner can not be reached, you might call Supervisor Eddie Lee at (703) 308-1690. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 2800 receptionist whose telephone number is (703) 308-0956.

EO/AU 2815

5/16/03

ALLAN R. WILSON
PRIMARY EXAMINER